

Name \_\_\_\_\_

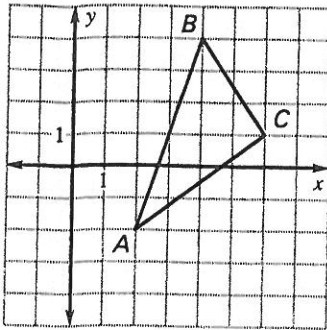
Date \_\_\_\_\_

**LESSON**  
**9.3**

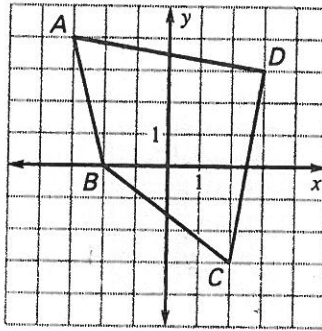
**Practice B** *continued*  
For use with pages 588–596

**Write a matrix for the polygon. Then find the image matrix that represents the polygon after a reflection in the given line.**

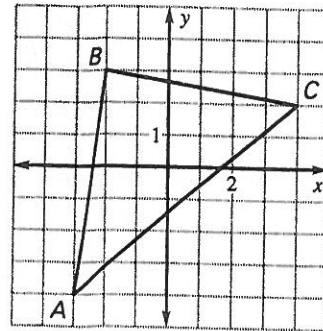
9.  $x$ -axis



10.  $y$ -axis



11.  $x$ -axis



**Multiply.**

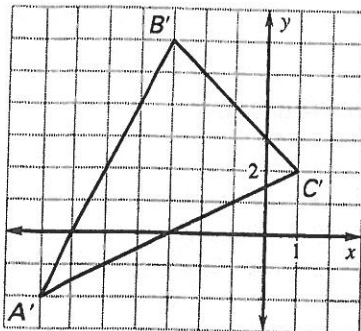
12.  $\begin{bmatrix} 4 & 4 \end{bmatrix} \begin{bmatrix} -2 \\ -3 \end{bmatrix}$

13.  $\begin{bmatrix} -3 & 3 \\ 3 & -2 \\ 0 & -1 \end{bmatrix} \begin{bmatrix} 1 & 0 \\ -2 & -1 \end{bmatrix}$

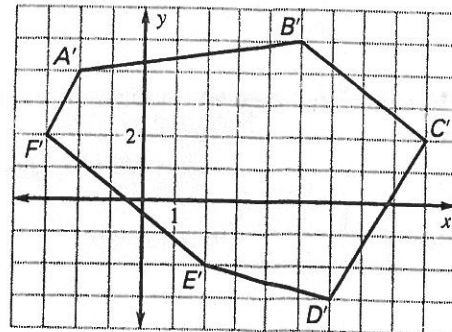
14.  $\begin{bmatrix} 1 & -4 \\ 3 & -2 \end{bmatrix} \begin{bmatrix} 4 & -1 \\ 0 & -3 \end{bmatrix}$

**Use the described translation and the graph of the image to find the matrix that represents the preimage.**

18. 4 units right and 2 units up



19. 3 units left and 2 units down



**Use the translation  $(x, y) \rightarrow (x - 5, y + 8)$ .**

- What is the image of  $B(4, 2)$ ?
- What is the image of  $D(-1, 5)$ ?
- What is the preimage of  $F'(-3, -4)$ ?
- What is the preimage of  $H'(7, -5)$ ?
- What is the image of  $J(0, 2)$ ?
- What is the preimage of  $K'(-4, 6)$ ?

**Write a rule for the translation.**

- 1 unit to the left and 1 unit up
- 3 units down
- 7 units to the left and 4 units down
- 10 units right and 8 units up

$\triangle ABC$  with vertices  $A(-2, 4)$ ,  $B(6, 2)$ , and  $C(3, -2)$  is translated to  $\triangle A'B'C'$ . Determine the translation using a vector in component form, and determine the coordinates of the remaining vertices.

16.  $A'(-5, 5)$

17.  $B'(2, -5)$

18.  $C'(-4, -5)$

19.  $B'(8, 6)$

QUIZ REVIEW  
↓  
QUIZ ON THURS!

Name \_\_\_\_\_

Date \_\_\_\_\_

**LESSON**  
**9.3**

**Practice B**

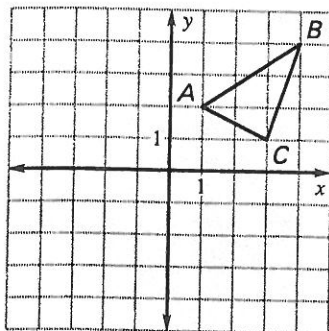
For use with pages 588–596

HW84H\_Perform Reflections

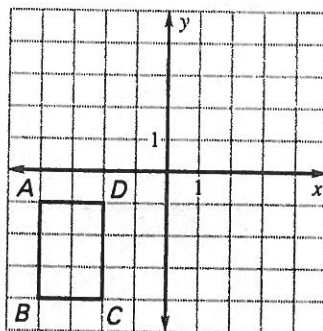
Failure to show all work and write in complete sentences will result in LaSalle!

**Graph the reflection of the polygon in the given line.**

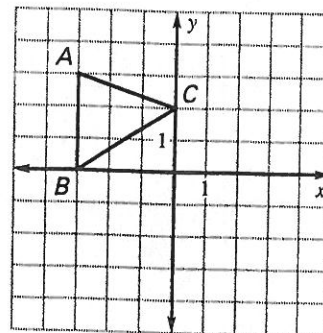
1.  $x$ -axis



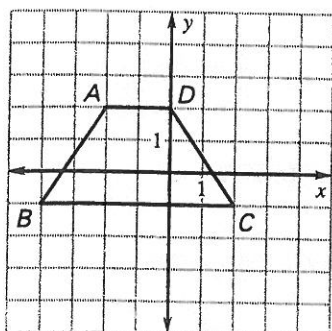
2.  $y$ -axis



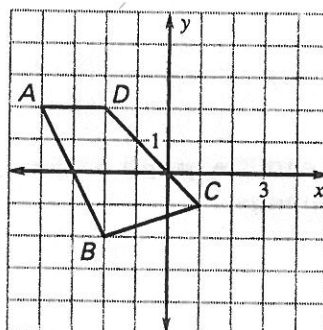
3.  $x = -1$



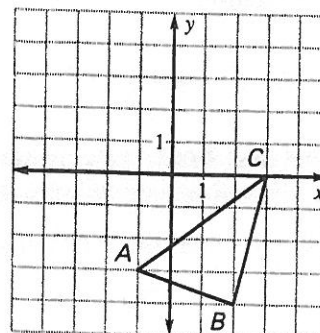
4.  $y = 1$



5.  $y = -x$



6.  $y = x$



**Use matrix multiplication to find the image. Graph the polygon and its image.**

*Must write out matrices!*

7. Reflect  $\begin{bmatrix} A & B & C \\ -3 & 1 & 6 \\ 4 & 7 & 2 \end{bmatrix}$  in the  $x$ -axis.

8. Reflect  $\begin{bmatrix} A & B & C & D \\ 2 & 5 & 7 & 1 \\ 6 & 4 & -5 & -3 \end{bmatrix}$  in the  $y$ -axis.

